Light is outstanding

OPTOTRONIC® Linear LED drivers

Linear indoor drivers with big impact:
OPTOTRONIC® FIT and Intelligent DALI (SELV and non-SELV)

Light is OSRAM
Excellent reasons to choose OPTOTRONIC® drivers

With our OPTOTRONIC® drivers, users benefit from high-performance products that are characterized by high quality, flexibility, reliability and efficiency:

1. **Maximum reliability** thanks to long experience:
   Re-use of know-how from well-proven OSRAM ECGs (electronic control gears) such as HALOTRONIC®, POWERTRONIC® and QUICKTRONIC®.

2. **High energy efficiency:** Up to 92 % (full load) and further energy saving with proprietary OSRAM light management systems (LMS).

3. **Freedom of design:** Small form factors similar to ECGs for traditional lamps, SELV and non-SELV drivers for maximum flexibility in luminaire design.

4. **Flexibility of application:** Suitable for PrevaLED® modules and other modules available in the market.

5. **Wide product portfolio:** Various product families, window drivers, dimmable products and different wattages.

**Future-proof solutions**

Using OPTOTRONIC® drivers not only means using durable, high-performance products but also staying flexible in terms of future application: OPTOTRONIC® drivers can be perfectly adjusted for their respective tasks and, if required, also be optimized by means of top-quality additional components such as OSRAM LMS.
OPTOTRONIC® Linear LED drivers

OPTOTRONIC® Linear drivers are the perfect solution for a wide variety of luminaire types and applications. Developed for linear light applications such as office or industry lighting, the OPTOTRONIC® Linear drivers offer you maximum flexibility in the design of all your LED-based luminaires – no matter if you need SELV or non-SELV drivers. Designed for the needs of your customer!

Main benefits at a glance
- Extensive portfolio of easy-to-use solutions: two product families with wide dimming range or on/off with selectable output current
- SELV and non-SELV versions: many possible combinations with any LED module
- Easy LED retrofit of traditional luminaires as well as integration into new LED luminaires thanks to the 30 x 21 mm housing of all devices
- High level of efficiency, reliability and safety
- Fully programmable and digital platform – see OPTOTRONIC® Intelligent DALI on pages 8 ff.

OPTOTRONIC® Linear driver portfolio

<table>
<thead>
<tr>
<th>Dimming</th>
<th>Fixed output: OPTOTRONIC® FIT</th>
<th>Dimmable (DALI): OPTOTRONIC® Intelligent (SELV)</th>
<th>Dimmable (DALI): OPTOTRONIC® Intelligent (non-SELV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort dimming AM+PWM</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Lowest dimming level</td>
<td>1 %</td>
<td>1 %</td>
<td>■</td>
</tr>
<tr>
<td>DALI DT6</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Touch DIM®/Touch DIM® Sensor</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Corridor function</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

| DC operation             | Emergency lighting*           | ■                                               | ■                                               |
|                         | Fixed DC level                | ■                                               | ■                                               |
|                         | Adjusted DC level             | ■ (by software)                                 | ■ (by software)                                 |

| Output                   | Fixed output value            | ■                                               | ■                                               |
|                         | Adjustable (LEDset2)          | ■                                               | ■                                               |
|                         | Via resistor                  | ■                                               | ■                                               |
|                         | Current tolerances [%]        | ≤ 20                                           | ≤ 5                                             | ≤ 5                                             |
|                         | Maximum output voltage [V]    | ≤ 60, isolated                                  | ≤ 60, isolated                                  | 250                                             |

| Function and performances | Overtemperature protection    | ■                                               | ■                                               | ■                                               |
|                         | Energy efficiency             | up to 87 %                                      | up to 90 %                                      | up to 92 %                                      |
|                         | CLO                           | ■                                               | ■                                               | ■                                               |
|                         | Stand-by losses [W]           | < 0.5                                          | < 0.3                                           |
|                         | Input voltage range [V]       | 220–240                                        | 220–240                                         | 220–240                                         |
|                         | Lifetime [h]**                | 1000000                                        | 1000000                                         | 1000000                                         |
|                         | T₀ range [°C]                 | -25…+50                                        | -25…+50                                         | -25…+50                                         |
|                         | Suitable for luminaire class  | I                                              | I                                               | I                                               |

* According to IEC 61347-2-3
** Operating at 10 °C lower than max. T₀, maximum failure rate of 10%
AM = Amplitude Modulation
PWM = Pulse Width Modulation
DT6 = DALI Device Type 6
CS = Current Setting
CLO = Constant Lumen Output
Our OPTOTRONIC® Linear portfolio

OSRAM is proud to present: Linear drivers that meet all your requirements

**OPTOTRONIC® FIT**
High reliability and innovative features for cost-effective solutions

**OPTOTRONIC® Intelligent DALI**
Maximum performance and flexibility (SELV and non-SELV) for energy-saving applications
Where can OPTOTRONIC® Linear drivers be used?

Floor-standing uplights (free-standing)

Suspended luminaires

Surface-mounted luminaires

Recessed luminaires

Wall and ceiling luminaires (linear)

Trunking systems and batten luminaires

Damp- and water-proof luminaires

Application areas

- Offices, e.g. small or open-plan offices, meeting rooms, reception areas
- Public buildings, e.g. hospitals, universities, schools and gyms
- Industry, e.g. production or logistics areas
- Retail, e.g. big retail outlets, food and non-food areas
Guarantee
OSRAM is committed to the high quality of its products. Therefore, OSRAM offers a guarantee for dedicated OPTOTRONIC® drivers, replacing drivers that fail during the guarantee period. The following guarantee periods apply to the OPTOTRONIC® Linear drivers:

OPTOTRONIC® FIT 5 years*
OPTOTRONIC® Intelligent DALI 5 years*

* Annual operating time of no more than 5,000 hours per year, not exceeding max. allowed Tc temperature

Applicable guarantee periods and OSRAM nomenclature/marking

Nomenclature and marking (example)

Product family and dimming
OT FIT: OPTOTRONIC® FIT
OTI DALI: OPTOTRONIC® Intelligent DALI

Power (out)*
35: 35 W
50: 50 W
80: 80 W
90: 90 W

Supply voltage
220-240: 220-240 V

Output current (max.)
700: 700 mA
1A0: 1000 mA
1A4: 1400 mA
1A6: 1600 mA
2A1: 2100 mA

Control (current)
CS: Current setting
LT2: LEDset2

Form factor
L: Linear

* For detailed power values, please see product data sheet (www.osram.com)
Multiple current setting
Each OPTOTRONIC® FIT driver offers three selectable currents. The main advantage of multiple current setting is the reduction of the number of different product versions in the warehouse. Furthermore, steps between currents are kept small, avoiding any need for LED drivers with intermediate currents.

Features of the current setting
— CS (current setting) of OT FIT offers the easiest way to choose the output currents without the need for resistors and to avoid typical mistakes when using dip switches
— Each product offers at least one typical current used in the market and will give you the possibility to reduce the current when LEDs will become even more efficient

OPTOTRONIC® FIT operating range

* Operating at 10 °C lower than max. Tc, maximum failure rate of 10 %
** At corresponding Tc temperature, maximum failure rate of 10 %

For detailed data, please see product data sheet (www.osram.com)

Example:
OT FIT 50/220-240/1A0 CS L:
Voltage: 27–54 V
Current: 800/925/1050 mA
OPTOTRONIC® Intelligent DALI

Maximum performance and flexibility (SELV and non-SELV) for energy-saving applications

Product features
- Window driver with adjustable output current via resistor, DALI or self-setting in combination with LEDset2
- Suitable for class I luminaires
- Lifetime of up to 100,000 hours* and high ambient temperature of up to +50 °C
- Overtemperature, overload, short/open circuit and wrong-mains protection
- Steepless and color-consistent dimming with DALI (from 100% to 1%, hybrid dimming)
- Programmable features: CLO (constant lumen output), corridor function, Touch DIM® (Sensor), emergency lighting
- Suitable for emergency lighting systems with central battery according to IEC 61347-2-3

Technical data

<table>
<thead>
<tr>
<th>Product reference</th>
<th>Product number</th>
<th>LxWxH (mm)</th>
<th>I_{out} (mA)</th>
<th>V_{out}</th>
<th>P_{out} (W)</th>
<th>Eff. max. (%)</th>
<th>T_a (°C)</th>
<th>T_c (°C)</th>
<th>Lifetime (h)**</th>
<th>I_{out} accur. (%)</th>
<th>Isolation</th>
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<tbody>
<tr>
<td>OTI DALI 80/220-240/2A1 LT2 L</td>
<td>4052899028050</td>
<td>360x30x21</td>
<td>1000-2100</td>
<td>27-54</td>
<td>32-80</td>
<td>≥ 90</td>
<td>-25...50</td>
<td>80/70</td>
<td>50k/100k</td>
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<td>SELV</td>
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<td>600-1600</td>
<td>27-54</td>
<td>32-80</td>
<td>≥ 90</td>
<td>-25...50</td>
<td>80/70</td>
<td>50k/100k</td>
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<td>SELV</td>
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<td>600-1400</td>
<td>27-54</td>
<td>20-54</td>
<td>≥ 88</td>
<td>-25...50</td>
<td>75/65</td>
<td>50k/100k</td>
<td>5</td>
<td>SELV</td>
</tr>
<tr>
<td>OTI DALI 90/220-240/1A0 LT2 L</td>
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<td>280x30x21</td>
<td>250-1000</td>
<td>54-240</td>
<td>1.5-90</td>
<td>≥ 92</td>
<td>-25...50</td>
<td>75/65</td>
<td>50k/100k</td>
<td>5</td>
<td>Non-SELV</td>
</tr>
</tbody>
</table>

* Operating at 10°C lower than max. T_a, maximum failure rate of 10%  
** At corresponding T_c temperature, maximum failure rate of 10%
**Individual DALI programming**

OTi DALI Linear drivers offer wide operating windows and thus ensure a high degree of flexibility. Therefore, LED generation upgrades can be easily managed, allowing for future-proof solutions, and the number of different product versions in the warehouse can be reduced.

Adjustment of the current is possible in three different ways:
- Programming by OSRAM software
- Use of a simple resistor (LEDset2)
- Automatic recognition via the LEDset2 interface when connected to PrevaLED® or other LED modules

Various operating windows are optimized for different general lighting applications and target lumen packages. Please find out more about the programming feature on page 10.

**Example:**
- OTi DALI 80/220-240/2A1 LT2 L:
  - Voltage: 27–54 V
  - Current: 1000–2100 mA

**Example:**
- OTi DALI 90/220-240/1A0 LT2 L:
  - Voltage: 54–240 V
  - Current: 250–1000 mA

For detailed data, please see product data sheet (www.osram.com)
New flexibility thanks to programmable DALI LED drivers
The DALI LED drivers of the second generation (DALI GII) allow for full digital programming via the DALI magic hardware and a specific free OEM software:

- OPTOTRONIC® tool (for OEMs): Output current and constant lumen output
- No need for an external resistor to set the current in case of digital programming
- Settings can be locked to prevent unauthorized changes
- DALI Wizard 2.1 software: All DALI settings plus the GII features (corridor function, Touch DIM® configuration, “Fit for emergency”, monitoring etc.)

For download of DALI Wizard 2.1, please go to: www.osram.com/software

Fit for SMART GRID
The DALI GII drivers can monitor the power consumption, the lamp operating hours (resettable) and the operating temperature of the driver. Additional advantage: “Fit for SMART GRID” can also provide better analysis of the lighting, thus ensuring safe operation of the system.

Touch DIM® function
The Touch DIM® function offers simple and cost-effective dimming of up to 20 drivers via commercially available switches or sensors. This allows free parameterization of the light value and the switch-on time via DALI Wizard 2.1 and DALI magic. Advantage: Dimming is cost-effective because of the small number of components and can easily be implemented. In addition to the dimming effect, the Touch DIM® Sensor function can automatically switch off the LED modules at a sufficient lighting level. This is controlled via light or presence detection and leads to a further increase of the energy savings.

Corridor function
The corridor function provides direct connection to commercially available motion sensors. A pre-installed program runs “out of the box” in the device. It can be individually adjusted via DALI magic and DALI Wizard 2.1. Three dimming levels and the associated overrun times can be adjusted individually as required. Advantage: Simple and energy-efficient lighting in application areas such as stairwells, corridors and parking blocks.

Fit for emergency (according to IEC 61347-2-3)
The driver can automatically switch to the emergency lighting mode. Alongside the system failure level (fractionation of the control line), used in accordance with the DALI standard, there is an optional automatic detection of the DC supply that sets a luminous flux between 0 and 100 %. This variably adjustable luminous flux value is protected from inadvertent overwriting by a locking bit. The operating range is 176–276 V with 0Hz DC (pulsating). In DC mode, the thermal management can be disabled, i.e. the full power of lamps/LED modules is available in case of an emergency. The DC mode also has higher priority than the system failure level. The setting can be carried out either via DALI Wizard 2.1 and DALI magic or within the Building Management System (BMS). The emergency mode can be switched on and off. If it is switched on, the AC mode will automatically be reimplemented without any additional device.

CLO (constant lumen output)
The CLO functionality is an essential part of OSRAM DALI LED drivers. Activating this function provides stable lighting conditions over the entire lifetime of LED modules. Year by year, the lumen output of LED modules decreases due to the loss of phosphoric components. In order to balance this out, the CLO function increases the output current smoothly over the entire lifetime of the modules – it typically starts with 85 % of the LED power. This not only ensures stable lighting but also saves energy and increases the lifetime of the LEDs.
LEDset 2nd Generation licensing program

With the experience gained from the LEDset technology and as a reaction to the growing demand of OEMs to introduce a standardized multi-vendor electrical interface for SSL systems, OSRAM now presents an enhanced version of LEDset with plenty of new features: LEDset 2nd Generation.

A smart electrical interface between the LED driver and the LED modules is the missing link essential to the maturity of the SSL components business. With the new licensing program for the LEDset 2nd Generation standardized electrical interface for SSL systems, OSRAM offers a technology that closes this link and fully matches the requirements:
- Cost-efficient
- Reliable
- Easy and ready to use

LEDset 2nd Generation is an analog 3-wire interface, including LED supply, allowing basic communication between an LED driver and one or more LED modules. The interface supports the following main functions:
- Output current setting of constant-current drivers to single LED modules as well as to series/parallel-connected LED modules
- Best matching of driver and modules working point (e.g. lm/W)
- Self-configuration according to system structure, automatic tracking of technology development (future-proof)
- Easy mode of operation (plug & play)
- Additional monitoring and protection features (e.g. thermal protection of the LED modules)
- Added value for OEMs: reliable TCO proposition, reduced structural costs

Hybrid (comfort) dimming technology

OPTOTRONIC® Intelligent DALI LED drivers are dimmable from 100% to 1%. In order to achieve optimum dimming, e.g. by ensuring that it is not visible and by avoiding stroboscopic effects, OSRAM combines two dimming methods: amplitude modulation and pulse width modulation (PWM).

From 100% to 25%, the drivers are dimmed by amplitude modulation. This is done by the adjustment of the current amplitude: the amplitude is decreased to dim the lighting down. The dimming levels between 1% and 25% are controlled by pulse width modulation (PWM). This combination offers the best way to ensure a smooth, non-flicker dimming behavior.

For detailed data, please see product data sheet (www.osram.com)
System solutions with OSRAM OPTOTRONIC® drivers and LED modules

OSRAM always offers you the perfect match of light source and driver

Optimum lighting does not only depend on the performance of the single components but also on the clever combination of these components to create a unique system solution. By combining OPTOTRONIC® Linear drivers with PrevaLED® modules from OSRAM, you can rest assured that you have found the perfect match for your lighting solution.

OSRAM OPTOTRONIC® drivers in combination with OSRAM LED modules offer you unique added value:

- Perfect system match, tested by OSRAM
- Simplified claim management thanks to just one provider for your system solution

For further details regarding driver and module compatibility, please contact your local OSRAM sales representative.
Driver compatibility – PrevaLED® Linear Value

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Modules</th>
<th>Linear Value 650 lm</th>
<th>Linear Value 1100 lm</th>
<th>Linear Value 1300 lm</th>
<th>Linear Value 2200 lm</th>
</tr>
</thead>
<tbody>
<tr>
<td>OT FIT 80 1A6 CS L</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>OT FIT 50 1A0 CS L</td>
<td>6, 8</td>
<td>3, 4</td>
<td>3, 4</td>
<td>2</td>
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<tr>
<td>OT FIT 35 700 CS L</td>
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<td>2, 3</td>
<td>2, 3</td>
<td>1</td>
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<tr>
<td>OTi DALI 80 2A1 LT2 L</td>
<td>8–10</td>
<td>4–6</td>
<td>4–6</td>
<td>2–4</td>
<td></td>
</tr>
<tr>
<td>OTi DALI 80 1A6 LT2 L</td>
<td>5–10</td>
<td>3–5</td>
<td>3–5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>OTi DALI 50 1A4 LT2 L</td>
<td>5–10</td>
<td>3–5</td>
<td>3–5</td>
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<tr>
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<td>2, 4, 5, 8, 10</td>
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</tbody>
</table>

Number of modules that can be operated with one driver

Driver compatibility – PrevaLED® Bar Value

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Modules</th>
<th>Bar Value 590 lm</th>
<th>Bar Value 845 lm</th>
<th>Bar Value 1100 lm</th>
<th>Bar Value 2200 lm</th>
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<tr>
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<td>3, 4</td>
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<td>OT FIT 50 1A0 CS L</td>
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<td>OT FIT 35 700 CS L</td>
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<td>OTi DALI 80 2A1 LT2 L</td>
<td>4–5, 8</td>
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Number of modules that can be operated with one driver

Driver compatibility – PrevaLED® Area Value

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Modules</th>
<th>Area Value 1100 lm</th>
<th>Area Value 4500 lm</th>
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<tr>
<td>OT FIT 35 700 CS L</td>
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<td>OTi DALI 80 2A1 LT2 L</td>
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<tr>
<td>OTi DALI 80 1A6 LT2 L</td>
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<td>1</td>
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</tr>
<tr>
<td>OTi DALI 50 1A4 LT2 L</td>
<td>3–6</td>
<td>1</td>
<td></td>
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</tbody>
</table>

Number of modules that can be operated with one driver
System solutions with OSRAM OPTOTRONIC® drivers and light management systems (LMS)

For higher levels of efficiency, flexibility and customization

Combining OSRAM OPTOTRONIC® LED drivers and light management systems (LMS) allows you to create unique lighting solutions that offer plenty of benefits to your customers. Your flexibility during projects is increased tremendously as the LMS provide a simple way to address OTi DALI LED drivers for easy dimming and setting of the desired lighting level. And the best thing about it: You also save huge amounts of energy. With LMS from OSRAM, you will always find the ideal solution – for various applications, luminaires and customer demands.

OPTOTRONIC® and Touch DIM®

The Touch DIM® functionality, integrated in all OTi DALI LED drivers, is as easy as it gets. Just use your existing pushbuttons to dim your light up and down, store one scene and use sensors for additional convenience. With the new Touch DIM® version, you can control up to 20 OTi DALI LED drivers simultaneously without any hassle.
OPTOTRONIC® and DALLeco®
When used together with OTi DALI LED drivers, DALLeco® offers the most simple way to achieve high energy savings in combination with flexible control. Via two DALI lines and with an intuitive remote control, you can control up to 32 OTI DALI LED drivers and six sensors or pushbutton couplers – ideal for offices, classrooms and meeting rooms.

OPTOTRONIC® and EASY Color Control
This intuitive system has been developed particularly for the control and integration of all common control signals (DALI, 1...10 V and DMX). Controlling one room (e.g. a meeting room) by just one device, combined with OTi DALI or OT FIT LED drivers in a single system, has never been that easy.

OPTOTRONIC® and DALI Professional
The combination of OPTOTRONIC® LED drivers and DALI Professional is the perfect choice for anyone looking for maximum flexibility in the control of multiple luminaires, groups or scenes. Via 4 DALI lines and with one controller, you can directly address and control up to 256 OTI DALI LED drivers in 4 x 16 groups and up to 50 sensors or pushbutton couplers. Via the DALI switch, OT FIT LED drivers can also be controlled. Dedicated to floors, open-plan offices or industrial areas, DALI Professional offers you a wide selection of sensors, user interfaces and software, making it ideal for larger DALI-controlled areas.